

An ambitious post-2015 development agenda will depend on soils

The sustainable management of soils is crucial to achieving the Sustainable Development Goals. This is evidenced by the analysis of the role soils play across the proposed agenda. However, some key aspects have not been sufficiently considered so far. Moreover, the SDGs will place increased demand on soils. Further advocacy is therefore needed to ensure that important soil and land related issues remain in the final declaration of the post-2015 agenda.

Soils around the world are being severely degraded. Conservative estimates warn of a current loss of 24 billion tons of topsoil each year because of wind and water erosion. Unsustainable agricultural practices are having negative impacts on soil resources as, for instance, some herbicides considerably suppress soil bacteria and fungi activity. The excessive use of nutrient inputs can also seriously alter biological balances and thus reduce soil biodiversity. Soils hold the second largest carbon pool on Earth after the oceans, but the equilibrium of this pool is greatly threatened by unsustainable land use changes. Despite the observed deceleration in the last decade, global forest area is still in decline, which jeopardises the effective conservation of soil resources and releases carbon dioxide into the atmosphere.

Soils play a key role in fighting poverty by supporting the livelihoods of people working in agriculture, one in three of all workers and over two thirds of the entire workforce in sub-

Saharan Africa. As we strive towards the widespread practice of sustainable agriculture, healthy soils will be key to the establishment of sustainable food systems. Furthermore, guaranteeing secure access and rights to productive land is going to be a stepping stone in empowering disregarded populations and vulnerable groups. For instance, improving gender equality depends on improved access by both men and women to productive resources like land.

The challenge to conserve soil resources is likely to intensify since population numbers will continue to rise as will the demand for energy and water. All these growing, and sometimes competing, demands will put greater pressure on continuously degraded soil and land resources. The SDGs must therefore reflect these trends and ensure that the protection of precious soil resources is guaranteed.

■ Where do soils play a role in the proposed SDGs?

The important role played by soils has been recognised in the Rio+20 outcome document, which contains the agreement to strive to achieve a land degradation-neutral world. The report of the High-Level Panel of Eminent Persons further supports this agreement and calls for systematic moni-



Photo: FAO/C. Bizzarri

Soil erosion caused by cattle grazing on steep slopes – only one of numerous reasons behind the degradation of valuable soils.

toring of the state of these resources in arid, semi-arid, and dry sub-humid areas. In addition, the United Nations General Assembly declared 2015 the international year of soils, which has reinforced the momentum in the international agenda to make the case for soils and ensure that the role they play for sustainable development is recognised.

The outcome document of the Open Working Group formed to propose SDGs drafts a set of 17 goals and 169 targets. Soils play a direct role in at least seven of the proposed goals (see box on page 14).

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Proposed goals and targets that relate to soil and land

GOAL 1: End poverty in all its forms everywhere

- 1.4** By 2030 ensure that all men and women, particularly the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership, and control over land and other forms of property, inheritance, natural resources, appropriate new technology, and financial services including microfinance.

GOAL 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

- 2.1** By 2030 end hunger and ensure access by all people, in particular the poor and people in vulnerable situations including infants, to safe, nutritious and sufficient food all year round.
- 2.3** By 2030 double the agricultural productivity and the incomes of small-scale food producers, particularly women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets, and opportunities for value addition and non-farm employment.
- 2.4** By 2030 ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters, and that progressively improve land and soil quality.

GOAL 5: Achieve gender equality and empower all women and girls

- 5.a** Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance, and natural resources in accordance with national laws.

GOAL 6: Ensure availability and sustainable management of water and sanitation for all

- 6.6** By 2020 protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.

GOAL 7: Ensure access to affordable, reliable, sustainable, and modern energy for all

- 7.2** Increase substantially the share of renewable energy in the global energy mix by 2030.

GOAL 11: Make cities and human settlements inclusive, safe, resilient and sustainable

- 11.a** Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning.

GOAL 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

- 5.3** By 2020 combat desertification, and restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.
- 5.14** By 2030 ensure the conservation of mountain ecosystems, including their biodiversity, to enhance their capacity to provide benefits which are essential for sustainable development.

■ Is the post-2015 agenda grounded enough?

As can be observed in the overview above, soils and land are strongly linked to the achievement of the SDGs but proposed Goal 15 on the protection of terrestrial ecosystems

puts the spotlight on the protection of land and soil resources, biodiversity and forests. The better integration of the environmental pillar of sustainable development has been a particular objective of the SDG process but the mainstreaming of this issue across the goals has only been partially success-

ful. The negotiations for soils within the context of the Open Working Group have not been amongst the most contentious topics, but there is opposition to a strong soils agenda based partially on the lack of agreement regarding the definition of the concept **Land Degradation-Neutral World** and the lack of consensus on indicators. A general support for targets on land degradation can be observed, but there have been calls for making them more precise and measurable. At this stage, the inclusion of the land degradation-neutral world language can already be seen as a positive step forward for the land and soil agenda, and it is crucial that it remains in the final declaration.

At the same time, the proposed goals are framed in a way that could lead to a silo approach for their implementation. On the one hand, the SDGs deal with individual topics and include targets to address the umbrella topic of the goal, but some of the issues addressed are interrelated, also with other goals and could lead to synergies and trade-offs. On the other hand, an agenda of 17 goals and the many accompanying targets and indicators will represent a challenging task for countries to implement in terms of financial resources and reporting. This means countries will likely have to choose the goals and targets that will receive priority, which could lead to a very ambitious goal, such as one to halt and reverse land degradation being left behind in order to achieve goals for poverty reduction or economic growth.

Furthermore, an analysis of the aspects covered in the SDGs that relate to these resources shows that major issues are addressed but some key aspects have been left out. For instance, it is widely accepted in the scientific and political community that soil and land degradation poses a challenge to sustainable development, and the need to address this global issue is covered under proposed Goals 2 (food security) and 15 (protection of terrestrial ecosystems). Soil restoration is also implied under Goal 6 for sustainable water management in target

Access by women to ownership and control over land is anchored in several places across the proposed goals and targets.

Photo: FAO/B. Nyakudjira



6.6, as there is a strong link between healthy soils and the replenishment of groundwater resources.

Moreover, soil and land degradation is not a solely physical and biochemical issue. It is very often linked to socio-economic aspects, which require a pro-poor and gender sensitive approach. Under **Goal 1** for poverty eradication, the aim is to guarantee access to and control over land, especially for poor populations. The situation is particularly acute in the case of women, as they generally hold fewer rights to land than men. The need to undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, is covered under **Goal 5**.

Two further important aspects are not addressed under the current agenda. The first is the crucial need to monitor and manage unsustainable land use changes which are expected to increase because of demand for food, feed, fuel and fibre. Soil sealing for construction will also contribute to this worrying trend. The second is the need to ensure an appropriate use of fertilisers as nutrient inputs. Very often, far more fertiliser is applied than necessary, and only a part of the application is effective, which means the rest is carried away by runoff or percolates down into the groundwater. These issues should be addressed in

an ambitious agenda for soils, and it is recommendable to include them if not in the goals or targets, then at the level of indicators.

■ Lack of integration of the SDGs poses a threat to soil resources

Soils offer a perfect example to show the need to move beyond silos in the SDG agenda. At the outset, it might seem that soil resources will be protected by default through the achievement of sustainable development goals for food security or ecosystem conservation. However, as a whole, the SDGs will place increasing and at times competing demands on soils. One example of this is the demand for food and energy. The projections of the UN Food and Agriculture Organization estimate that global agricultural production would need to increase by 70 per cent over the period from 2005/07 to 2050 in order to feed the growing world population sufficiently. According to these projections, crop production will need to increase by 1.1 per cent per annum. An additional one billion tonnes of cereals and 212 million tonnes of meat would have to be produced annually by 2050. At the same time, biomass demand for energy production will increase as biofuel use almost triples from 2012 to 2040 and will make up eight per cent of total road transport fuel demand by 2040.

An integrated approach to implement the post-2015 agenda is needed to manage these competing demands and find potential synergies, but such an approach will only be effective when accompanied by governance instruments that ensure access to fertile soils for poor and vulnerable groups. One option to ensure an integrated approach is to engage multiple stakeholders in the monitoring of implementation to ensure accountability and national ownership of the process. National stakeholders will be able to keep an overview of the protection of soil resources and to recognise and draw attention to unsustainable trends or practices.

■ Conclusions

Soils are owned and managed locally but fulfil globally relevant functions. This highly justifies the need for a global approach for the sustainable governance and management of these resources. Soil-related functions and ecosystem services need to remain spread across the proposed goals, and further advocacy efforts need to be made to ensure that they are integrated in the final declaration to be signed at the next United Nations General Assembly.

As the process to define the final set of SDGs reaches its final stretch, there is a need to engage in the development of strategies with a view towards the implementation phase of the agenda. This will require the setting of appropriate and globally relevant indicators and effective monitoring to allow the successful translation of the global goals into national contexts.

However targets for soils are phrased, further work will be required to define strategies to implement the SDGs for land and soils at national level. Monitoring and accountability processes that build on multi-stakeholder engagement are going to be crucial in this regard.